

**The New Hampshire Climate Change Policy Task Force**

**New Hampshire Climate Action Plan**

*A Plan for New Hampshire's Energy, Environmental  
and Economic Development Future*

**Appendix 4.8:  
Lead by Example in Government Operations**

**Prepared by the  
NH Department of Environmental Services  
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## **Table of Contents**

### **Recommended Actions**

1. Establish an Energy Management Unit to Address State Energy Use and Greenhouse Gas Emissions (GLA 1.1)	3
2. Establish an Energy Consumption and Greenhouse Gas Emissions Baseline Inventory for State Government (GLA 1.2)	6
3. Establish a Self-Sustaining Fund for Energy Efficiency Projects in State Government (GLA 1.3)	8
4. Support the Establishment of Local Energy Commissions (GLA 1.4)	11
5. Include Climate Change Adaptation and Mitigation in Programs and Planning (GLA 1.5)	14
6. Promote Public School Siting and Building Aid to Reduce Energy Use (GLA 2.6)	16

## GLA Action 1.1 – Establish an Energy Management Unit to Address State Energy Consumption and Greenhouse Gas Emissions

### Summary

New Hampshire state government should establish an Energy Management Unit (EMU) charged with implementing and overseeing the recommendations of the Climate Change Policy Task Force as well as the Governor's Energy Efficiency Initiative. This unit would be responsible for tracking state government efforts to reduce energy use and costs, reduce greenhouse gases, achieve state energy reduction/climate change goals, and provide assistance on energy efficiency matters to local and regional government entities. The proposed Energy Management Unit would consist of four new positions: a project manager, a data manager, a fleet manager, and an energy education and outreach specialist. This new unit would coordinate the implementation of those Actions that address energy use related to State buildings, fleet operation, and procurement as well as implementing programs that target the energy consumption of the State employees.

### Program Description

1. Mechanism (*i.e., how the policy or program achieves the desired result*): This entity would provide a new or strengthened organizational capacity which may be required to efficiently and broadly implement the energy and cost saving recommendations throughout state government as identified by the Climate Change Policy Task Force and the Governor's Energy Efficiency Initiative<sup>1</sup>. This new unit would be charged with implementing those Actions that were not directly identified for inclusion in the Action Plan and include addressing the following goals:

- Goal 1 – Position State Government to Lead-by-Example
- Goal 2 – Reduce Energy Use in Government Buildings
- Goal 3 – Increase Use of Renewable Energy Resources and Energy-Efficient Technologies
- Goal 4 – Reduce Emissions through Vehicle Choice and Technology
- Goal 5 – Reduce Fuel Consumption by State Fleet
- Goal 6 – Reduce Fuel Consumption by State Employee Vehicles

In addition, the EMU would be responsible for monitoring the compliance of state agencies with current and future statutes and regulations that target energy use such as RSA 9-B, which requires each state agency to consider "smart growth" principles when providing advice, expending funds, or distributing grant monies, for public works, transportation, or major capital improvement projects, and for the construction, rental, or lease of facilities.

2. Implementation Plan (*i.e., how to implement the specific policy or program*):
  - a. *Method of Establishment (e.g., legislation, executive order)*: Requires establishment of new positions or adding new responsibilities and strengthened authorities to existing positions. This will require legislative implementation. The positions could be phased in as resources become available. Establishing a project manager for the state is the highest priority.
  - b. *Resources*: Requires four new positions or restructuring of existing positions. It also requires that State agencies adopt and implement consistent document and reporting procedures for energy purchases and consumption, and equipment purchases and usage.

i. \_\_\_\_\_

<sup>1</sup> In July 2005, Governor Lynch issued an Executive Order calling upon all state agencies to reduce energy use in state facilities and in state vehicles. The initiative has lead to a database to track energy consumption and expenditures for all state facilities, and staff are actively exploring opportunities to reduce costs by pooling demand for electricity, natural gas, heating oil and other fuels (<http://www.sunspot.admin.state.nh.us/Energysystem/>).

- c. *Barriers to Address (especially for medium to low feasibility actions)*: Hiring freeze – state budget implications, shifting staff resources from existing programs.
3. Parties Affected by Implementation (*i.e., residents, businesses, municipalities, etc.*):
    - a. *Parties responsible for implementation*: Department of Administrative Services, the Office of Energy and Planning or other state agencies as well as the legislature.
    - b. *Parties paying for implementation*: Taxpayers
    - c. *Parties benefiting from implementation*: Taxpayers
  4. Related Existing Policies and Programs (*i.e., those that address similar issues without interacting*): State energy manager and energy coordinators; State purchasing agent: In November 2002, The New Hampshire Energy Plan was issued by the ECS, which was commissioned by the state legislature and was intended to provide policymakers with guidance on key energy issues the state would face over the course of ten years. In an update by DES and OEP in 2005, the status of the recommended actions was reviewed and further recommendations for short, mid, and long-term implementation were posed. The NH General Court had enacted SB 443 into law to create a temporary Energy Planning Advisory Board in 2004.
  5. Complimentary Policies:
    - a. *Existing*: See above.
    - b. *Proposed*:
      - HB 1412, establishing a commission to study contracting with a state fleet manager;
      - SB 419, HB 1561 establishing new Energy Boards.
  6. Time frame for Implementation: 2009 Legislative Session
  7. Anticipated Timeframe of Outcome: Short-term (2012)

#### Program Evaluation

1. Estimated CO<sub>2</sub> Emission Reductions
  - a. Short-term: Unknown
  - b. Mid-term: Unknown
  - c. Long-term: Unknown
2. Economic Effects
  - a. Costs:
    - i. Short term: Creating four new positions at labor grade 20 would cost approximately \$200,000-250,000; funding a project manager with an engineering degree would require greater resources.
    - ii. Mid-term:
    - iii. Long term: Salary and benefit costs would be expected to increase
  - b. Savings: Program savings are unknown at this time. Demonstrated savings and cost performance measures would be key to implementing a new energy management unit.

3. Other Benefits/Impacts:

- a. *Environmental*: This would reduce emissions of carbon dioxide, greenhouse gases, and other primary air pollutants in order to mitigate the effects of climate change and pollution of our ecosystems. This would lead to improved air and water quality directly as well as have more indirect effects on the fish and wildlife and the ecosystems upon which they depend.
- b. *Health*: Human health benefits will be realized by decreasing exposure to toxic and hazardous pollutants, many of which may have an effect that is exacerbated by the increase in hot summer days. Avoiding the impacts of air pollution can reduce the incidence of cardiac and respiratory disease.
- c. *Social*: Increased awareness and implementation of energy saving and sustainable generation efforts through public participation and education will alleviate climate change. However, methods of reducing energy and alternative generation technologies typically have short-term payback periods and can then provide savings for consumers and economic security for the State in the mid to long-term. By producing energy sustainably and domestically, the economy will benefit through increased jobs within the state.
- d. *Other*: Supporting renewables and conservation lowers the amount of greenhouse gases emitted into the atmosphere, reduces the load on our aging and maximized infrastructure, and creates a demand for alternative technologies in the U.S. marketplace.

4. Potential for Implementation (*i.e., including challenges, obstacles and opportunities*):

- a. *Technical*: Significant implementation challenge in creating meaningful performance goals and tracking measures. However, meaningful implementation of CCTF recommendations, and resulting energy and cost savings, require a more robust management and oversight effort that currently exists in state government.
- b. *Economic*: There may be significant challenges in the state budget process.
- c. *Statutory/regulatory*: Not difficult
- d. *Social*:

5. Other Factors of Note:

6. Level of Group Interest:

7. References:

## GLA Action 1.2 – Establish an Energy Consumption and GHG Baseline Inventory for State Government

### Summary

New Hampshire should establish a baseline inventory of energy consumption and greenhouse gas (GHG) emissions for state government for the year 2005. This baseline inventory would assist in identifying opportunities having the greatest potential to reduce state government's energy consumption and greenhouse gas emissions. The baseline inventory would also provide a benchmark which the state could use to track progress in specific energy efficiency and renewable energy projects.

### Program Description

1. Mechanism (i.e., how the policy or program achieves the desired result): The baseline inventory would facilitate understanding of the types and amounts of energy used by state government activities. The inventory would include a profile of the specific types and sources of energy as well as the amounts consumed on a quarterly and annual basis. The baseline data could be analyzed to identify the opportunities within each agency or across all of state government to achieve rapid increases in energy efficiency and reductions in GHG emissions as well as to guide the development of programs and policies to achieve larger reductions over the long term. This baseline could also be used as a benchmark to which the state's goals are pegged and would enable progress to be measured in the years ahead.
2. Implementation Plan (i.e., how to implement the specific policy or program)
  - a. *Method of Establishment (e.g., legislation, executive order)*: This would be a work product of the Energy Management Unit
  - b. *Resources*: Staff/personnel to collect the data and perform QA/QC, perform necessary analyses and generate regular reports.
  - c. *Barriers to Address (especially for medium to low feasibility actions)*: There may be a need to establish a uniform data collection and reporting protocol for all State agencies in order to enable rapid integration of all data into the database.
3. Parties Affected by Implementation (i.e., residents, businesses, municipalities, etc.)
  - a. *Parties Responsible for Implementation*: Department of Administrative Services, the Office of Energy and Planning and the Department of Environmental Services.
  - b. *Parties Paying for Implementation*: All State Agencies and Departments
  - c. *Parties Benefiting from Implementation*: Tax Payers and all residents.
4. Related Existing Policies and Programs (i.e., those that address similar issues without interacting):
5. Complementary Policies (i.e., those that achieve greater reductions through parallel implementation):
  - a. *Existing*:
  - b. *Proposed*: All other GLA actions.
6. Timeframe for Implementation: Immediate
7. Anticipated Timeframe of Outcome: Immediate

## Program Evaluation

### 1. Estimated CO<sub>2</sub> Emission Reductions

- a. Short-term (2012): Zero
- b. Mid-term (2025): As measured by implementation/actions
- c. Long-term (2050): Sustained reductions from energy efficiency measures

### 2. Economic Effects

- a. Costs:
  - i. Short-term (2012): Staff time to gather data and calculate emissions
  - ii. Mid-term (2025): Staff time for annual emissions calculations
  - iii. Long-term (2050): Same as mid-term
- b. Savings:
  - i. Short-term (2012):
  - ii. Mid-term (2025):
  - iii. Long-term (2050):

### 3. Other Benefits/Impacts:

- a. *Environmental*: This would reduce emissions of carbon dioxide, greenhouse gases, and other primary air pollutants in order to mitigate the effects of climate change and pollution of our ecosystems. This would lead to improved air and water quality directly as well as have more indirect effects on the fish and wildlife and the ecosystems upon which they depend.
- b. *Health*: Human health benefits will be realized by decreasing exposure to toxic and hazardous pollutants, many of which may have an effect that is exacerbated by the increase in hot summer days. Avoiding the impacts of air pollution can reduce the incidence of cardiac and respiratory disease.
- c. *Social*: Increased awareness and implementation of energy saving and sustainable generation efforts through public participation and education will alleviate climate change. However, methods of reducing energy and alternative generation technologies typically have short-term payback periods and can then provide savings for consumers and economic security for the State in the mid to long-term. By producing energy sustainably and domestically, the economy will benefit through increased jobs within the state.
- d. *Other*: The government would be able to set an example for municipalities and New Hampshire businesses to watch and model in their own operations.

### 4. Potential for Implementation (*i.e., including challenges, obstacles and opportunities*)

- a. *Technical*: The measure should be easily implemented as the necessary tools and resources exist and can be accessed. However, there may be different tracking and recording methodologies and storage formats that would have to be addressed.
- b. *Economic*: Most cost is related to staff time with some equipment and software costs. This Action will support the reduction in energy consumption and GHG emissions and there may be a net cost savings associated with many of the actions that result.
- c. *Statutory/Regulatory*: Once the EMU is established there should be no barriers.

### 5. Other Factors of Note:

### 6. Level of Group Interest: High

### 7. References:

## GLA Action 1.3 – Establish a Self-Sustaining Fund for Energy Efficiency Projects in State Government

### Summary

New Hampshire should create a non-lapsing Energy Efficiency Fund, overseen by the Director of Plant & Property Management and State Energy Manager. State agencies could request monies from this fund to cover the costs of their energy efficiency projects. The fund would be financed and replenished with monies equal to 2 percent of each agency's utility budget from the previous year. Monies would be allocated proportionally to subsidize requested energy efficiency projects using technologies shown to reduce energy consumption. The Energy Efficiency Fund would boost the efforts of state agencies to find ways to conserve energy and lower their utility bills. By charging a single entity, Plant & Property, to administer the distribution of these funds, consistent procedures could be maintained for the benefit of small and large agencies alike.

### Program Description

1. Mechanism (i.e., how the policy or program achieves the desired result): A non-lapsing Energy Efficiency Fund supported by monies equal to 2 percent of each agency's prior-year utility budget. The State Energy Manager would provide oversight of the distribution of funds and would limit agencies to their allowed shares. Funds would be applied to offset the costs of the agencies' energy conservation efforts. Guidelines would be established for analyzing expected financial impacts, including payback calculations, prior to distribution of funds.
2. Implementation Plan (i.e., how to implement the specific policy or program)
  - a. *Method of Establishment (e.g., legislation, executive order)*: Legislation, January 2009
  - b. *Resources Required*: Present approximation is \$420,000 (2 percent of \$21 million)
  - c. *Barriers to Address (especially for medium to low feasibility actions)*: The current fiscal environment may make setting aside monies for a new fund difficult at a time when department heads are being asked to make budgets cuts.
3. Parties Affected by Implementation (i.e., residents, businesses, municipalities, etc.)
  - a. *Parties Responsible for Implementation*: Director of Plant & Property and State Energy Manager, unless or until a State Energy Management Unit (EMU) is formed and becomes operational.
  - b. *Parties Paying for Implementation*: New Hampshire taxpayers
  - c. *Parties Benefiting from Implementation*: Any state agency that wants to invest in energy efficiency projects; NH taxpayers.
4. Related Existing Policies and Programs (i.e., those that address similar issues without interacting): RSA 21-I: 19, allowing for participation in energy-saving performance contracts.
5. Complementary Policies (i.e., those that achieve greater reductions through parallel implementation):
  - a. *Existing*: RSA 21-I: 19, allowing for participation in energy-saving performance contracts.
  - b. *Proposed*:
    - GLA Action 1.1 – Establish an Energy Management Unit.



- HB 1647 (2008 Session) established an Energy Efficiency Fund with monies received for the participation of state agencies in demand response programs advocated by ISO-New England. State facilities that sign up will agree to a certain reduction of power use during power emergency days called by ISO-NE. This effort helps the stability of the electrical grid during those peak summer days and lessens the need for emergency use of generators. Participating agencies are paid whether emergencies are called or not. In lieu of these payments going to the General Fund, this bill would direct the payments to this new Energy Efficiency Fund with oversight by the Dir. of Plant & Property and State Energy Manager. If the bill passes, monies from this fund could then be requested by participating agencies to pay for energy efficiency projects/contracts and for reimbursement for expenses accrued for demand response program expenses. The GLA working group would expand this fund as described in Program Description Mechanism.

6. Timeframe for Implementation: July 2009

7. Anticipated Timeframe of Outcome: Short-term and ongoing.

#### Program Evaluation

##### 1. Estimated CO<sub>2</sub> Emission Reductions

- Short-term (2012)
- Mid-term (2025)
- Long-term (2050)

##### 2. Economic Effects

- Costs:
  - Short-term (2012)
  - Mid-term (2025)
  - Long-term (2050)
- Savings:
  - Short-term (2012)
  - Mid-term (2025)
  - Long-term (2050)

##### 3. Other Benefits/Impacts:

- Environmental:* This would reduce emissions of carbon dioxide, greenhouse gases, and other primary air pollutants in order to mitigate the effects of climate change and pollution of our ecosystems. This would lead to improved air and water quality directly as well as have more indirect effects on the fish and wildlife and the ecosystems upon which they depend.
- Health:* Human health benefits will be realized by decreasing exposure to toxic and hazardous pollutants, many of which may have an effect that is exacerbated by the increase in hot summer days. Avoiding the impacts of air pollution can reduce the incidence of cardiac and respiratory disease.
- Social:* Increased awareness and implementation of energy saving and sustainable generation efforts through public participation and education will alleviate climate change. However, methods of reducing energy and alternative generation technologies typically have short-term payback periods and can then provide savings for consumers and economic security for the State in the mid to long-

term. By producing energy sustainably and domestically, the economy will benefit through increased jobs within the state.

- d. *Other*: The government would be able to set an example for municipalities and New Hampshire businesses to watch and model in their own operations.

4. Potential for Implementation (*i.e., including challenges, obstacles and opportunities*):

- a. *Technical*: There should be no technical barriers to implementing this action.
- b. *Economic*: Due to the current fiscal limitations the funding to establish and maintain the fund may be difficult to set aside, even with the short-term payback associated with much energy efficiency actions.
- c. *Statutory/Regulatory*: Once the EMU is established there should be no barriers.
- d. *Social*:

5. Other Factors of Note: By not implementing such a program, State agencies will continue to consume energy at the present levels and at a cost affected by inflation at a rate greater than 2% each year.

6. Level of Group Interest:      High

7. References:

## GLA Action 1.4 – Support the Establishment of Local Energy Commissions

### Summary

New Hampshire should support the newly forming Local Energy Committees (LECs) in municipalities around the state by providing the statutory and programmatic resources needed to make these committees a working part of town governance. In March 2007, 164 New Hampshire municipalities passed a historic Climate Resolution that called on state legislators, the New Hampshire congressional delegation, and presidential candidates to address climate change. The resolution also called for the establishment of LECs to address the greenhouse gas emissions associated with the municipalities' activities. Since that time, nearly 100 cities and towns have established Local Energy Committees. The State of New Hampshire can support this groundswell of civic action by:

- Pass legislation that authorizes municipalities to establish Energy Commissions and grants specific authority to them. The legislation would serve to formalize the role of those commissions in municipal government and set up a standard framework outlining their power and the goals to achieve; and
- Supporting the capabilities of regional planning commissions and state agencies to assist towns in inventorying their energy use and GHG emissions and implementing GHG reduction plans.

### Program Description

1. Mechanism (*i.e., how the policy or program achieves the desired result*): The proposed action would generate local involvement in energy policy and help effect true reductions in energy consumption and CO<sub>2</sub> emissions. It would allow residents to set up municipal commissions dedicated to achieving energy efficiency and conservation. Faced with the daunting task of curbing the tide of climate change, New Hampshire citizens are seeking local means by which to do their part. The local energy commissions would serve as conduits through which residents could have positive and meaningful impacts in their own communities.
2. Implementation Plan (*i.e., how to implement the specific policy or program*):
  - a. *Method of Establishment (e.g., legislation, executive order)*: The NH legislature will need to pass legislation in order to amend RSA 674 and grant NH towns the authority to establish formal energy committees with specific authority. An inherent relationship exists with LEC's and local planning and zoning boards, which should be considered when crafting legislation to amend RSA's such as RSA 672 and RSA 674. Once the necessary RSA's are amended, each town will be responsible for establishing their communities Energy Commission.

*Note:* Legislation was recently passed that allows municipalities to create an Energy Chapter to the communities Master Plan. This further supports the connection between energy planning and the local planning board/department in addressing local energy concerns.
  - b. *Resources Required*: Financial support at the state level to RPC's, or enhanced support at relevant state agencies will assist Energy Committees during the creation and start-up operations. At least one staff member at each RPC, along with at least one staff member at a determined state agency should be designated to help support and answer questions of communities opting to create an Energy Committee.
  - c. *Barriers to Address (especially for medium to low feasibility actions)*: Potential barriers arise if the Energy Committees are not given enough authority to oversee and make weighted recommendations to the local governing bodies regarding energy conservation, sustainable design and energy generation. This barrier can be corrected through a provision within the enabling statute directly stating the Committee's jurisdiction and authority. Otherwise, Committee recommendations may fall on deaf ears. An additional barrier will evolve in regards to appropriate funding provided to RPC's to support the various needs LEC's may request.

3. Parties Affected by Implementation (*i.e., residents, businesses, municipalities, etc.*):
  - a. *Parties Responsible for Implementation:* The principal parties responsible for implementation are the NH Legislature and the individual municipalities. Additionally, RPC's will play a significant support role for the Commissions during the creation phase.
  - b. *Parties Paying for Implementation:* In respect to the Energy Committees, since committees are volunteer based, the payments for implementation would be largely reserved to some staff, office and copying support through the municipality. In regards to RPC support payments, state resources may need to be applied to help support that particular role within the RPC's.
  - c. *Parties Benefiting from Implementation:* Beneficiaries of these committees include:
    - i. Local residents and municipalities through programs created by the Energy Committees or the RPC's;
    - ii. The community and municipality through energy inventories of municipal buildings aimed at identifying and reducing energy costs found within those facilities;
    - iii. Local businesses and industry seeking assistance in reducing energy consumption and their (local and global) carbon footprint; and
    - iv. Other municipal committees and boards seeking support in sustainable energy measures.
4. Related Existing Policies and Programs: Utilities programs that provide assistance with electricity use; planning commissions provide assistance to member towns with transportation planning, Master Plans, Hazardous Material Plans, Open Space Plans, and a host of other local land use regulatory components
5. Complementary Policies (*i.e., those that achieve greater reductions through parallel implementation*):
6. Timeframe for Implementation: 2009
7. Anticipated Timeframe of Outcome: Typically one year elapses from analysis of an inventory to adoption of a municipal energy plan. Upon the adoption of the energy plan a community would likely see substantial progress within three to five years. Significant energy consumption and emission reductions (on the realm of 20, 30, or 40% reductions) for municipalities would likely be seen within five to seven years.

#### Program Evaluation

1. Estimated CO<sub>2</sub> Emission Reduction:
  - a. Short-term (2012): Unknown\*
  - b. Mid-term (2025): Unknown\*
  - c. Long-term (2050): Unknown\*

\*Because of the uncertainty associated with the types of programs and efforts each Energy Committee and RPC will conduct, the estimated CO<sub>2</sub> emissions reductions are currently unknown. There are, however, endless opportunities for substantial emissions reductions within municipal buildings, local school facilities, and the greater community as a whole. Nevertheless, it is fairly safe to say that with the formation of an Energy Committee and additional assistance and support from a communities RPC, emission reductions for individual communities could well exceed 20-30%.
2. Economic:
  - a. Costs: Dependant on level of support desired for RPC's and State Agencies to assist LEC's

- b. *Savings:* Significant savings could be seen at the municipal level in terms of energy savings for municipal facilities. Additionally, education provided by LEC's to the broader community regarding building energy efficiency can make the difference for some small businesses between being able to whether escalated energy costs and having to close their doors.

3. Other Benefits/Impacts:

- a. *Environmental:* On-site energy conservation/sustainable generation will help reduce the overall carbon footprint of specific buildings, the municipality, and the overall community. Additionally, this reduced energy consumption helps reduce the overall impact of energy consumption within New Hampshire and the country as a whole.
- b. *Health:* Reduced health risks associated to acute illness such as asthmatic reactions to unhealthy air quality generated through power plant generators. The reduction of energy demand will help reduce the frequency of these health risks.
- c. *Social:* Increased awareness and implementation of energy saving efforts through increased public participation and education. Increased mobilization of concerned state residents regarding climate change and the potential resulting impacts faced to New Hampshire. A potential impact to a community may be slight upfront costs related to innovative energy upgrades and generation systems.
- d. *Other:*

4. Potential for Implementation (*i.e., including challenges, obstacles and opportunities*):

- a. *Technical:* Technical obstacles may include learning curves associated with energy auditing and facility upgrades
- b. *Economic:* Economic opportunities will be seen with the overall energy cost reductions after making energy upgrades. Economic challenges include the initial upfront costs associated with energy upgrades.
- c. *Statutory/Regulatory:*
- d. *Social:* Social challenges may occur regarding the level of expertise found on LEC's. This variation in knowledge lends more weight to the need for dedicated expertise at the RPC and state agency levels. Continued challenges with education to communities will also likely continue.

5. Other Factors of Note:

6. Level of Group Interest:

7. References:

## GLA Action 1.5 – Include Climate Change Adaptation and Mitigation in Programs and Planning

### Summary

New Hampshire should adopt a policy that requires climate change adaptation and mitigation to be incorporated by each state agency into all of the agency's planning and programmatic activities. Climate change has impacts that could affect the entire spectrum of activities (e.g., economic, recreational, agricultural) conducted within the state. At the same time, the vast majority of activities in New Hampshire are contributing to climate change in large and small ways. Because the state has the capacity to influence all these activities regardless of origin – governmental, commercial, residential, or industrial – New Hampshire's government agencies should be proactive in seeking solutions to climate change. A logical starting point is to require consideration of climate change in all state planning and programming functions.

### Program Description

1. Mechanism (*i.e., how the policy or program achieves the desired result*): By incorporating climate change mitigation and adaptation into all of its planning and programming activities, the state can institutionalize climate change action and distribute responsibility to implement recommended actions across state government. The state's proactive response to climate change will affect both governmental and non-governmental interests and will help to engender climate change action as a necessary and normal part of the New Hampshire way of life.
2. Implementation Plan (*i.e., how to implement the specific policy or program*):
  - a. *Method of Establishment (e.g., legislation, executive order)*: Executive Order
  - b. *Resources Required*: A broad education and outreach campaign may be required to increase the awareness of climate change science and impacts with State agencies and staff. A central body may be required to provide guidance to the State agencies.
  - c. *Barriers to Address (especially for medium to low feasibility actions)*: Resistance to change and resource limitation may be issues to consider.
3. Parties Affected by Implementation (*i.e., residents, businesses, municipalities, etc.*):
  - a. *Parties Responsible for Implementation*: All State agencies and the governor's office
  - b. *Parties Paying for Implementation*: State agencies and ultimately the tax payers
  - c. *Parties Benefiting from Implementation*: All state residents.
4. Related Existing Policies and Programs (*i.e., those that address similar issues without interacting*):  
The State Development Plan contains reference to climate change
5. Complementary Policies (*i.e., those that achieve greater reductions through parallel implementation*):
  - a. *Existing*:
  - b. *Proposed*: All Adaptation working group actions, especially ADP Action 7 – Establish a Permanent Climate Change Advisory Council
6. Timeframe for Implementation: Immediate
7. Anticipated Timeframe of Outcome: Immediate

### Program Evaluation

1. Estimated CO<sub>2</sub> Emission Reductions

- a. Short-term (2012): N/Q
- b. Mid-term (2025)
- c. Long-term (2050)

2. Economic Effects

a. Costs:

- i. Short-term (2012): N/Q
- ii. Mid-term (2025)
- iii. Long-term (2050)

b. Savings:

- i. Short-term (2012): N/Q
- ii. Mid-term (2025)
- iii. Long-term (2050)

3. Other Benefits/Impacts:

- a. *Environmental*: This would reduce emissions of carbon dioxide, greenhouse gases, and other primary air pollutants in order to mitigate the effects of climate change and pollution of our ecosystems. This would lead to improved air and water quality directly as well as have more indirect effects on the fish and wildlife and the ecosystems upon which they depend.
- b. *Health*: Human health benefits will be realized by decreasing exposure to toxic and hazardous pollutants, many of which may have an effect that is exacerbated by the increase in hot summer days. Avoiding the impacts of air pollution can reduce the incidence of cardiac and respiratory disease.
- c. *Social*: Integrating climate change into every aspect of government operations will increase the overall security of the state by increasing the stability of the energy supplies and reducing the affect that climate change impacts will have on our communities.
- d. *Other*:

4. Potential for Implementation (*i.e., including challenges, obstacles and opportunities*):

- a. *Technical*: There may be some barriers to implementation as the required data for future infrastructure may need to be developed to account for the changing climate and associate altered precipitation patterns.
- b. *Economic*: the cost outside the development of updated information may be minimal as it would be incorporated into existing procedures and programs.
- c. *Statutory/Regulatory*: There should be no barriers to implementation.
- d. *Social*: This could have a positive impact on municipalities and businesses and individual households as they observe the government integrating this in standard operating procedures and may begin to do so on their own.

5. Other Factors of Note:

6. Level of Group Interest:

7. References:

## GLA Action 2.6 – Promote Public School Siting and Building Aid to Reduce Energy Use

### Summary

New Hampshire should revise state public school siting and building aid policies to more effectively and cogently encourage the renovation of existing schools and the creation of high performance schools (through renovation or new construction) that both meet current educational standards and further the goals of RSA 9B and similar local and regional smart growth objectives. New emphasis on renovation through comprehensive feasibility studies, meaningful coordination between affected municipal bodies, adequate maintenance, and effective disposition processes can reinforce existing trends, take advantage of new opportunities for energy efficiency upgrades, and help alleviate conflicts in local school construction decision-making. For high performance schools, an additional funding bonus of up to 2 percent (resulting in a total bonus of up to 5 percent) may also entice more school districts into pursuing energy efficiency improvements that are part of major renovation projects or new construction.

### Program Description

1. Mechanism (*i.e., how the policy or program achieves the desired result*):

The NH School Building Aid program provides financial reimbursement for the cost of construction or substantial renovation of school buildings. This office also provides information and technical advice concerning planning, construction, and maintenance of school facilities. In terms of funding, the state offers grants to school districts, which are proposing the construction of new schools and the renovation or expansion of existing school buildings (kindergarten through 12<sup>th</sup> grade). School districts may receive up to 60 percent of the cost of construction, land acquisition, planning and design, furniture, fixtures, and equipment. In order to receive state school building aid money, municipal school projects must comply with current NH Department of Education School Building Construction Standards (see NH Rules Ed 321).

In order to be eligible for state aid currently, municipalities considering a substantial renovation of an existing school must compare the cost of substantial renovation to the cost of a new building. If the construction cost of the renovation exceeds 60% of the new building cost, the municipality must provide documentation of the cost comparison and explain why the renovation alternative was chosen. Minimum site sizes offer quantitative standards that most pre-1940 building renovation projects do not meet. Evidence suggests that present rules result in frequent waivers being granted for school renovation projects.

Additional stress should be placed on the renovation option. New emphasis on meaningful coordination between affected municipal bodies, comprehensive feasibility studies, adequate maintenance, and effective disposition processes can supplement Education Department Standards. This reinforcement of the historic trend toward renovation will also take advantage of new opportunities for energy efficiency upgrades, and help alleviate conflicts in local school construction decision-making.

By placing even greater emphasis on renovation, the state can realize multiple greenhouse gas benefits. Public investment in schools on the outside of town centers or neighborhoods can contribute to a greater reliance on personal automobiles and bus transportation and may exacerbate a dispersed pattern of growth. The reuse of older school buildings (as a school or for another use) allows the retention of the embodied energy in the existing structure.

The Collaborative for High Performance Schools (CHPS) provides an option that will help reduce greenhouse gas emissions and the energy costs associated with the operation of the school building. As authorized in HB 129, passed in 2005, New Hampshire currently provides up to 3 percent additional reimbursement in the School Building Aid formula for schools meeting CHPS-NE criteria. By increasing this funding up to a maximum of 5 percent, sufficient to surpass the incremental cost currently associated with the creation of high performance buildings, a greater number of schools would likely pursue CHPS certification. This program covers both new



construction and school renovation projects and will lead to long-term energy savings with associated CO<sub>2</sub> and cost reductions for both new and existing facilities.

CHPS is both a set of school building standards and an organization. As an organization, its mission is to promote the use of standards which facilitate the design, construction, operation, and maintenance of high performance schools. Such spaces employ proactive, cost-effective, and integrated design and operational strategies and technologies that result in productive, healthy, efficient, and responsible educational centers in New Hampshire communities.

The CHPS organization oversees the nation's first green building rating program especially designed for K-12 schools. The CHPS Criteria make up a comprehensive system of environmentally responsible benchmarks conceived and elaborated by a technical committee, of over fifty school facilities experts, including state agency officials, designers, school district officials, contractors, product manufacturers, and energy and water utility officials. A CHPS school is a school that has achieved excellence in environmental efficiency and healthy building practices.

CHPS recognizes superior design teams and school districts through award ceremonies, case studies, and media outreach. Schools can self-certify through the free CHPS Designed program, or seek third-party verification of their high performance school through the CHPS Verified program. In New Hampshire, verification that a particular project has met the CHPS-NE standard, and is therefore eligible for the incentive funding, is the responsibility of the NH Department of Education. Northeast Energy Efficiency Partnerships (NEEP) holds the license for the use of the CHPS criteria in New Hampshire, Connecticut, Rhode Island, Vermont, and Maine and has adapted the CHPS Criteria Volume for use with New England schools. The NH Department of Education has adopted CHPS NE as the definition of a high performance school in New Hampshire, one worthy of the incentive funding. Many agencies and organizations provide education and outreach to school districts and design firms on high performance school building.

2. Implementation Plan (i.e., how to implement the specific policy or program):
  - a. *Method of Establishment (e.g., legislation, executive order)*: Revised standards could be established through Executive Order or further legislation. Determination of how to best institute permanent changes needs to be further explored. Supporters could advocate for improved guidelines and legislation establishing new and/or revised, state-level school-siting policies, while improving existing policies with respect to rehabilitation, facility expansion and additions, and extended use.
  - b. *Resources Required*: Additional funding may be required for the CHPS grant program to meet any increase in demand and keep pace with associated inflationary costs of construction.
  - c. *Barriers to Address (especially for medium to low feasibility actions)*: In the current fiscal environment, the allocation of additional funding, even for a project with a short-term payback time and long-term avoided costs, may be difficult to accomplish.
3. Parties Affected by Implementation (i.e., residents, businesses, municipalities, etc.):
  - a. *Parties Responsible for Implementation*: The NH Dept. of Education, Bureau of School Approval and Facility Management.
  - b. *Parties Paying for Implementation*: NH taxpayers.
  - c. *Parties Benefiting from Implementation*: NH taxpayers, municipalities, students and teachers.
4. Related Existing Policies and Programs (i.e., those that address similar issues without interacting):

Ongoing study by the NH Preservation Alliance
5. Complementary Policies (i.e., those that achieve greater reductions through parallel implementation):
  - a. *Existing*

b. *Proposed:*

- NH HB 129
- RCI Action 1.1 – Maximize Energy Efficiency in New Construction
- RCI Action 1.2 – Maximize Energy Efficiency in Existing Residential Buildings
- RCI Action 1.3 – Maximize Energy Efficiency in Existing Commercial, Industrial, and Municipal Buildings
- RCI Action 1.4A – Upgrade Building Energy Codes
- RCI Action 1.4B – Improve Building Energy Code Compliance
- RCI Action 1.8 – Conserve Embodied Energy in Existing Building Stock
- GLA Action 2.1 – Apply High-Performance Building Standards to New Construction and Renovations
- GLA Action 2.2 – Maximize Energy Efficiency in Existing Government Buildings
- GLA Action 2.3 – Revise State Appliance and Equipment Procurement Policies
- GLA Action 2.4 – Implement Energy Reduction Measures for State Employees
- GLA Action 2.5 – Implement Energy Reduction Measures for State Facilities

6. Timeframe for Implementation: Immediately

7. Anticipated Timeframe of Outcome: There will be a short lag time between expansion of the CHPS incentive program and the construction of more qualifying high performance schools. An increase in the number of high performance school renovation projects could realize emission reductions immediately by preserving embodied energy, avoiding emissions associated with land conversion, and any associated transportation benefits. . Over time the emission and cost-savings reductions would grow larger as the useable lifespan of the more energy efficient building enables long-term energy savings.

Program Evaluation

1. Estimated CO<sub>2</sub> Emission Reductions

- a. Short-term (2012)
- b. Mid-term (2025)
- c. Long-term (2050)

2. Economic Effects

- a. Costs:
  - i. Short-term (2012)
  - ii. Mid-term (2025)
  - iii. Long-term (2050)
- b. Savings:
  - i. Short-term (2012)
  - ii. Mid-term (2025)
  - iii. Long-term (2050)

3. Other Benefits/Impacts:

- a. *Environmental:* These proposed actions would reduce emissions of carbon dioxide, greenhouse gases, and other primary air pollutants and would serve to mitigate the effects of climate change and pollution of our ecosystems. This would lead to improved air and water quality directly as well as have more indirect effects on the fish and wildlife and the ecosystems upon which they depend. Impacts on

rural landowners and agricultural production would be diminished if schools are not built on the outskirts of communities.

- b. *Health:* Human health benefits will be realized by decreasing exposure to toxic and hazardous pollutants, many of which may have an effect that is exacerbated by the increase in hot summer days. Avoiding the impacts of air pollution can reduce the incidence of cardiac and respiratory disease. In addition, the siting of schools can directly impacts traffic congestion, air pollution, school transportation budgets, and children's health and childhood obesity issues.
- c. *Social:* Increased awareness and implementation of energy saving and sustainable generation efforts through public participation and education will change behavior that now exacerbates climate change. However, methods of reducing energy use and of promoting alternative generation technologies typically have short-term payback periods and can then provide savings for consumers and economic security for the State in the mid to long-term. These proposed actions would be beneficial both to students, in terms of enhanced learning environments, and to school districts struggling to meet rising energy costs while fulfilling their mandate to provide a quality education.
- d. *Other:* The government would be able to set an example for municipalities and New Hampshire businesses to watch and model in their own operations. Historic schools, for instance, are important to cultural and community vitality, and state policies should be shifted to protect the buildings, promote maintenance funding, and encourage renovation.

There are also distinct benefits to be gained from a vibrant local school that remains within a neighborhood. There are measurable economic consequences for local businesses and for the tax base involved when a school is moved out of a neighborhood, and there are possible negative effects of new development on rural landowners.

4. Potential for Implementation (*i.e., including challenges, obstacles and opportunities*):

- a. *Technical:* There are no perceived barriers as the technology exists and is already being applied.
- b. *Economic:* The cost savings will benefit the state taxpayer overall and the individual school districts which receive CHPS funding. However, the allocation of additional funds for participation in the CHPS program may be difficult in the near term due to the current budget crisis, even with short-term payback and long-term savings. The renovation of existing facilities may be made more cost effective – that is, have a lower life-cycle cost – when the full cost of transportation is factored into the project evaluation.
- c. *Statutory/Regulatory:* *There should be no barriers to implementation.*
- d. *Social:* This could have a positive impact on municipalities and students and would likely be well supported by NH communities struggling to educate students and pay for school energy bills.

5. Other Factors of Note:

6. Level of Group Interest: High

7. References:

- CHPS overview, <http://www.chps.net/overview/index.htm>.
- National CHPS, <http://www.chps.net/national.htm#Neep>.
- New Hampshire Department of Education's School Building Aid Program, [www.ed.state.nh.us/buildingaid](http://www.ed.state.nh.us/buildingaid).
- NH HB 129, 2005 Session, <http://www.gencourt.state.nh.us/legislation/2005/HB0129.html>
- NH Partnership for High Performance Schools. [www.nhphps.org](http://www.nhphps.org).
- Northeast Energy Efficiency Partnerships (NEEP), <http://www.neep.org/>.

- “Schools for Successful Communities: An Element of Smart Growth.” September 2004, by Council of Education Facilities Planners International and USEPA
- “Renovate or Replace? The Case for Restoring and Reusing Older School Buildings” by the Pennsylvania Department of Education and Pennsylvania School Boards Association